(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau





(43) International Publication Date 22 September 2005 (22.09.2005)

PCT

(10) International Publication Number WO 2005/088097 A1

- (51) International Patent Classification7: F01N 9/00, 3/025
- (21) International Application Number:

PCT/JP2005/004739

- (22) International Filing Date: 10 March 2005 (10.03.2005)
- (25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data: 2004-068995

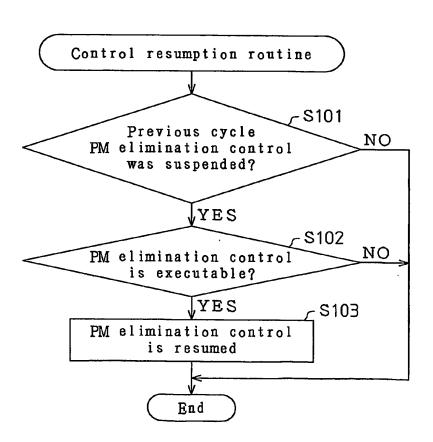
11 March 2004 (11.03.2004) JF

(71) Applicants (for all designated States except US): TOY-OTA JIDOSHA KABUSHIKI KAISHA [JP/JP]; 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). DENSO COR-PORATION [JP/JP]; 1-1, Showa-cho, Kariya-shi, Aichi, 4488661 (JP).

- (72) Inventors; and
- (75) Inventors/Applicants (for US only): OTSUBO, Yasuhiko [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). YOKOI, Tatsuhisa [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). MATSUNO, Shigehiro [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). MATSUOKA, Hiroki [JP/JP]; c/o TOYOTA JIDOSHA KABUSHIKI KAISHA, 1, Toyota-cho, Toyota-shi, Aichi, 4718571 (JP). INABA, Takayoshi [JP/JP]; c/o DENSO CORPORATION, 1-1, Showa-cho, Kariya-shi, Aichi, 4488661 (JP).
- (74) Agents: ONDA, Hironori et al.; 12-1, Ohmiya-cho 2-chome, Gifu-shi, Gifu, 5008731 (JP).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,

[Continued on next page]

(54) Title: EXHAUST PURIFYING APPARATUS AND EXHAUST PURIFYING METHOD FOR INTERNAL COMBUSTION ENGINE



(57) Abstract: An exhaust purifying apparatus estimates an accumulation amount of particulate matter trapped about a catalyst in an exhaust system. When the estimated accumulation amount is equal to or more than a permissible value, the apparatus executes PM elimination control for supplying unburned fuel component to the catalyst. The apparatus sets the estimated accumulation amount to zero at the completion of the PM elimination When execution of the PM elimination control becomes possible after suspension of the control, the apparatus resumes the PM elimination control even if the accumulation amount is less than the permissible value. Therefore, the estimated accumulation amount is prevented from being significantly deviated from the actual accumulation amount due to suspension.

WO 2005/088097 A1

CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),

European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

with international search report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.